REMARKS

Reexamination and reconsideration of this Application, withdrawal of the rejections, and formal notification of the allowability of all claims as now presented are earnestly solicited in light of the above amendments and remarks that follow.

Claims 1-6 and new Claims 11-12 are now pending. Claims 1, 2, 5 and 6 were amended. New Claims 11 and 12 depend from Claims 6 and are directed to specific embodiments deleted from Claim 6. Thus no new matter has been added.

The Office Action requests a copy of the priority document. Since the present application is the U.S. national phase of PCT Application PCT/FR97/01541 and the French priority documents were filed in that application, it should not be necessary to file certified copies of the French priority documents in the order to perfect the priority claim.

The Office Action states that the application does not contain an abstract. Applicants have now provided an abstract and respectfully request withdrawal of this objection.

Claim 5 stands rejected under 35 U.S.C. §101 because it does not set forth any steps involving the method or process. Claim 5 has been amended to include the steps of the claimed method. Accordingly, Applicants respectfully request withdrawal of this rejection.

Claims 1-6 stand rejected under 35 U.S.C §112, second paragraph as being indefinite. Claim 1 has been amended, deleting the phrase "all or part" and inserting reference to an amino acid residue having at least one arginine. Claim 2 has been amended to provide correct Markush claim format. The Office Action further states that there is no corresponding sequence identifier in Claim 2. Applicants submit that the sequences recited in Claim 2 refer to the sequence of human filaggrin, which is known by one skilled in the art. Accordingly, there is no need to identify such a sequence. Claim 6 has been amended, eliminating the "optionally" phrase. Applicants respectfully request withdrawal of this rejection.

Claims 1, 5 and 6 stand rejected under 35 U.S.C. §102(b) as being anticipated by Simon *et al.* (Journal of Clinical Investigation, Vol. 92, No. 3, pages 1387-1393, 1993). Applicants traverse this rejection.

The 40kD protein described in the publication of Simon *et al.* corresponds to the "acido-neutral isoforms" of filaggrin resulting from the natural maturation of profilaggrin in the human epidermis. Therefore, it is a very heterogeneous mixture of polypeptides of different sequences, due to the high v' 'ility between the sequences of the filaggrin units in a same individual.

In contrast to Simon *et al.*, the claimed antigens are homogeneous preparations resulting from the citrullination of a recombinant or synthetic filaggrin or filaggrin fragment. The claimed antigens consist only of polypeptides having the same sequence, and not a mixture of polypeptides of a different sequence. Although Claim 6 may comprise a mixture of the antigens of Claims 1-5, those antigens are recombinant or synthetic. Further, Claim 6 specifically excludes the 40kD protein of Simon *et al.* Accordingly, Simon *et al.* does not anticipate any of Applicants' pending claims.

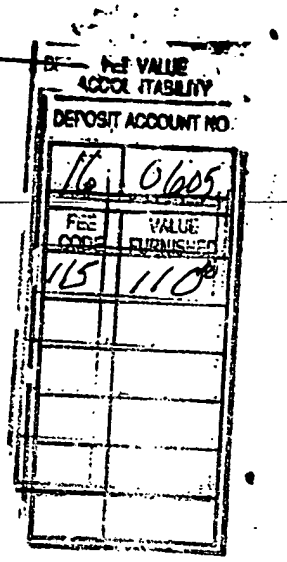
Further, one skilled in the art would not arrive at Applicants' claimed invention by practicing what is taught in Simon *et al.* Simon *et al.* does not teach or suggest the claimed invention. Simon *et al.* is merely reporting the results of the use of human filaggrin. Simon *et al.* does not teach or suggest a homogeneous preparation comprising recombinant or synthetic antigens having at least one arginine residue replaced by a citrulline residue. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to

allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

Raymond O. Linker, Jr.
Registration No. 26,419



Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Charlotte Office (704) 444-1000
Fax Charlotte Office (704) 444-1111

CERTIFICATION OF FACSIMILE TRANSMISSION	CERTIFICATE OF MAILING
I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office at Fax No. on the date shown below. (Type or print name of person signing certification.) _____ Signature Date	I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231, on June 28, 2002. Lorna Morehead Lorna Morehead

Version with Markings to Show Changes Made:

1. (Amended) An artificial antigen which is specifically recognized by the antifilaggrin autoantibodies present in the serum of patients suffering from rheumatoid arthritis, which consists of a recombinant or synthetic polypeptide comprising at least 5 consecutive amino acid residues, at least one being an arginine residue, [all or part] of a sequence derived from that of a filaggrin unit, by replacing at least one arginine residue with a citrulline resi[illegible]

2. (Amended) The artificial antigen as claimed in claim 1, which consists of a peptide comprising all or part of at least one sequence derived[:] from the group consisting of [- from]the sequence corresponding to amino acids 144 to 314 of a human filaggrin unit, [or alternatively - from] and the sequence corresponding to amino acids 76 to 144 of a human filaggrin unit, by replacing at least one arginine residue with a citrulline residue.

5. (Amended) A method for the in vitro diagnosis of rheumatoid arthritis comprising the steps of

providing an [Use of the] antigen as claimed in any one of claims 1 to 4 [for the *in vitro* diagnosis of rheumatoid arthritis];

providing a biological sample for diagnosis of rheumatoid arthritis;

bringing the biological sample into contact with the antigen under conditions allowing the formation of an antigen/antibody complex with autoantibodies specific for rheumatoid arthritis, which may be present in said biological sample;

detecting, by appropriate means, the antigen/antibody complex which may be formed.

6. (Amended) An antigenic composition for diagnosing the presence of autoantibodies specific for rheumatoid arthritis in a biological sample, which contains at least one antigen as claimed in any one of claims 1 to 4, [optionally labeled and/or conjugated with a carrier molecule,] with the exclusion of compositions with a structure identical to that of a preparation of isoforms of filaggrin which is purified from the human epidermis comprising a mixture of isoforms having a molecular weight of 40,000 measured by SDS-PAGE and a pI ranging between 5.8 and 7.4.